Ammonium uptake by two fresh water periphytic microalgae immobilized in alginate beads

ABSTRACT

Microalgae play a significant role in nutrient recycling in aquatic ecosystem. Many species of microalgae have been isolated, cultured, and studied in laboratory to explore their potential use in aquaculture. In this study, two microalgae Spaerocystis sp. and Stigeoclonium sp., were isolated from aquaculture tanks in Aquatic Animal Health hatchery, Universiti Putra Malaysia. This study tested the capability of the microalgae cultured normally and immobilized in sodium alginate for uptake of ammonium. Between Spaerocystis sp. and Stigeoclonium sp., no difference was found on ammonium uptake. However, it was found that there was significantly higher ($P<0.05$) ammonium uptake by microalgae immobilized in sodium alginate than microalgae in normal culture. This higher uptake of ammonium by the immobilized microalgal beads maybe due to ammonium assimilation by microalgae and adsorption on alginate beads.

Keyword: Immobilized microalgae; Periphytic microalgae; Spaerocystis sp.; Stigeoclonium sp.